AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous versions and listings:

1. (Currently Amended) A method comprising the steps of:

discovering information that identifies a second network element that is coupled to a port of a first network element or describes a device type of the second network element, wherein, based on content received by the first network element, the information identifies the second network element or describes the device type ~~based on content received by the first network element~~;

associating the port of the first network element with a port role definition selected from a plurality of port role definitions based on the discovered information;

retrieving one or more configuration settings that are associated with the selected port role definition; and

applying the one or more configuration settings to the port of the first network element.

2-23. (Canceled)

24. (Currently Amended) A tangible computer-readable medium carrying one or more sequences of instructions, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:

discovering information that identifies a second network element that is coupled to a port of a first network element or describes a device type of the second network element, wherein, based on content received by the first network element, the information identifies the second network element or describes the device type ~~based on content received by the first network element~~;

associating the port of the first network element with a port role definition selected from a plurality of port role definitions based on the discovered information;

retrieving one or more configuration settings that are associated with the selected port role definition; and applying the one or more configuration settings to the port of the first network element.

25-45. (Canceled)

46. (Currently Amended) An apparatus comprising:

means for discovering information that identifies a network element that is coupled to a port of the apparatus or describes a device type of the network element, wherein, based on content received by the apparatus, the information identifies the network element or describes the device type ~~based on content received by the apparatus~~;

means for associating the port of the apparatus with a port role definition selected from a plurality of port role definitions based on the discovered information;

means for retrieving one or more configuration settings that are associated with the selected port role definition; and

means for applying the one or more configuration settings to the port of the apparatus.

47. (Currently amended) An apparatus comprising:

a network interface that is coupled to a data network for receiving one or more packet flows therefrom;

a processor;

one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the steps of:

discovering information that identifies a network element that is coupled to a port of the apparatus or describes a device type of the network element, wherein, based on content received by the apparatus, the information identifies the network element or describes the device type ~~based on content received by the apparatus~~;

associating the port of the apparatus with a port role definition selected from a plurality of port role definitions based on the discovered information;

retrieving one or more configuration settings that are associated with the selected port role definition; and applying the one or more configuration settings to the port of the apparatus.

48. (Previously Presented) An apparatus as recited in Claim 47, wherein the one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the step of associating the port of the apparatus with a port role definition comprise one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the steps of:

mapping the port to a profile selected from a plurality of profiles based on the discovered information; and

matching the profile to the selected port role definition.

49. (Previously Presented) An apparatus as recited in Claim 48, wherein the profile comprises a profile identifier, and one or more rules that maps one or more ports to the profile based on the discovered information.

50. (Previously Presented) An apparatus as recited in Claim 48, wherein the port role definition comprises a port role definition identifier, and one or more configuration values that can be applied to the port that is associated with the port role definition.

51. (Previously Presented) An apparatus as recited in Claim 50, wherein the one or more configuration values comprise one or more configuration attribute-value pairs for the port that is associated with the port role definition.

52. (Previously Presented) An apparatus as recited in Claim 50, wherein the one or more configuration values comprise one or more quality of service values for the port that is associated with the port role definition.

53. (Previously Presented) An apparatus as recited in Claim 50, wherein the one or more configuration values comprise one or more lines of a configuration language of the apparatus.

54. (Previously Presented) An apparatus as recited in Claim 47, wherein the discovered information comprises a type identifier of the network element that is coupled to the port of the apparatus; and an identity identifier of the network element.

55. (Previously Presented) An apparatus as recited in Claim 54, wherein the type identifier of the network element is a capabilities type-length-value (TLV) or platform TLV of a Cisco Discovery Protocol (CDP) message from the network element; and wherein the identity identifier of the network element is a sysName TLV of a CDP message from the network element.

56. (Previously Presented) An apparatus as recited in Claim 47, further comprising one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the steps of:
providing the discovered information to a management application;
receiving zero or more additional configuration settings from the management application;
applying the additional configuration settings to the port of the apparatus.

57. (Previously Presented) An apparatus as recited in Claim 56, wherein the additional configuration settings are generated based on the discovered information.

58. (Previously Presented) An apparatus as recited in Claim 47, wherein the port is a first port of a plurality of ports, and_wherein the apparatus is programmed to automatically configure a selection of one or more ports from the plurality of ports.

59. (Previously Presented) An apparatus as recited in Claim 47, wherein the steps are performed when the apparatus boots up.

60. (Previously Presented) An apparatus as recited in Claim 47, wherein the steps are performed for the port of the apparatus when the port becomes active after a period of inactivity.

61. (Previously Presented) An apparatus as recited in Claim 47, wherein the steps are performed at a specified periodic time interval.

62. (Previously Presented) An apparatus as recited in Claim 47, wherein the one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the step of discovering information comprise one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the step of:
querying a Cisco Discovery Protocol (CDP) cache of the first element to obtain a Capabilities type-length-value (TLV) and a sysName TLV.

63. (Previously Presented) An apparatus as recited in Claim 48, wherein the profile further comprises a counter indicating a number of ports to which the profile is currently mapped.

64. (Previously Presented) An apparatus as recited in Claim 48, wherein the profile further comprises a counter indicating a number of ports to which the profile is currently mapped, and wherein the steps of retrieving and applying are performed only when the counter is less than or equal to one.

65. (Previously Presented) An apparatus as recited in Claim 47, wherein the apparatus is a switch or router.

66. (Previously Presented) An apparatus as recited in Claim 47, wherein the network element that is coupled to a port of the apparatus is a personal computer, phone, router, server, or storage device.

67. (Previously Presented) An apparatus as recited in Claim 47, wherein the step of discovering is performed in accordance with a protocol selected from the set consisting of Cisco Discovery Protocol, Network-Based Application Recognition, 802.1x, and Simple Network Management Protocol.

68. (Previously Presented) An apparatus as recited in Claim 47, wherein the step of discovering is performed in accordance with a Simple Network Management Protocol, and wherein the discovered information comprises a sysDescr object and sysObjectID of a management information base (MIB) of the network element that is coupled to a port of the apparatus.

69. (Previously Presented) An apparatus as recited in Claim 46, wherein the means for associating the port of the apparatus with a port role definition comprises:

means for mapping the port to a profile selected from a plurality of profiles based on the discovered information; and

means for matching the profile to the selected port role definition.

70. (Previously Presented) An apparatus as recited in Claim 69, wherein the profile comprises a profile identifier, and one or more rules that maps one or more ports to the profile based on the discovered information.

71. (Previously Presented) An apparatus as recited in Claim 69, wherein the port role definition comprises a port role definition identifier, and one or more configuration values that can be applied to the port that is associated with the port role definition.

72. (Previously Presented) An apparatus as recited in Claim 71, wherein the one or more configuration values comprise one or more configuration attribute-value pairs for the port that is associated with the port role definition.

73. (Previously Presented) An apparatus as recited in Claim 71, wherein the one or more configuration values comprise one or more quality of service values for the port that is associated with the port role definition.

74. (Previously Presented) An apparatus as recited in Claim 71, wherein the one or more configuration values comprise one or more lines of the a configuration language of the apparatus.

75. (Previously Presented) An apparatus as recited in Claim 46, wherein the discovered information comprises a type identifier of the network element that is coupled to the port of the apparatus, and an identity identifier of the network element.

76. (Previously Presented) An apparatus as recited in Claim 75, wherein the type identifier of the network element is the a capabilities type-length-value (TLV) or platform TLV of a Cisco Discovery Protocol (CDP) message from the network element; and wherein the identity identifier of the network element is a sysName TLV of a CDP message from the network element.

77. (Previously Presented) An apparatus as recited in Claim 46, further comprising:
means for providing the discovered information to a management application;
means for receiving zero or more additional configuration settings from the management application; and
means for applying the additional configuration settings to the port of the apparatus.

78. (Previously Presented) An apparatus as recited in Claim 77, wherein the additional configuration settings are generated based on the discovered information.

79. (Previously Presented) An apparatus as recited in Claim 46, wherein the port is a first port of a plurality of ports, and further comprising means for automatically configuring a selection of one or more ports from the plurality of ports.

80. (Previously Presented) An apparatus as recited in Claim 46, wherein the apparatus discovers information that identifies or describes a device type of a network element that is coupled to a particular port of the apparatus and applies configuration settings to the particular port based on the information when the apparatus boots up.

81. (Previously Presented) An apparatus as recited in Claim 46, wherein the apparatus discovers information that identifies or describes a device type of a network element that is coupled to the port of the apparatus and applies configuration settings to the particular port based on the information when the port becomes active after a period of inactivity.

82. (Previously Presented) An apparatus as recited in Claim 46, wherein the apparatus discovers information that identifies or describes a device type of a network element that is coupled to a particular port of the apparatus and applies configuration settings to the particular port based on the information at a specified periodic time interval.

83. (Previously Presented) An apparatus as recited in Claim 46, wherein the means for discovering information comprises means for:

querying a Cisco Discovery Protocol (CDP) cache of the first element to obtain a Capabilities type-length-value (TLV) and a sysName TLV.

84. (Previously Presented) An apparatus as recited in Claim 69, wherein the profile further comprises a counter indicating a number of ports to which the profile is currently mapped.

85. (Previously Presented) An apparatus as recited in Claim 69, wherein the profile further comprises a counter indicating a number of ports to which the profile is currently mapped, and wherein the means for retrieving and applying are performed only when the counter is less than or equal to one.

86. (Previously Presented) An apparatus as recited in Claim 46, wherein the apparatus is a switch or router.

87. (Previously Presented) An apparatus as recited in Claim 46, wherein the network element that is coupled to a port of the apparatus is a personal computer, phone, router, server, or storage device.

88. (Previously Presented) An apparatus as recited in Claim 46, wherein the means for discovering is performed in accordance with a protocol selected from the set consisting of Cisco Discovery Protocol, Network-Based Application Recognition, 802.1x, and Simple Network Management Protocol.

89. (Previously Presented) An apparatus as recited in Claim 46, wherein the means for discovering is performed in accordance with a Simple Network Management Protocol, and wherein the discovered information comprises a sysDescr object and sysObjectID of a management information base (MIB) of the network element.